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Scutelliseta mischogaster, a new species of apterous Sphaeroceridae (Diptera) from South Africa[1]

by

Allen L. Norrbom and **Ke Chung Kim**
(The Frost Entomological Museum, Department of Entomology,
The Pennsylvania State University, University Park, PA 16802)

ABSTRACT

Scutelliseta mischogaster sp. n., an apterous sphaerocerid from South Africa, is described and illustrated. Its phylogenetic relationship within *Scutelliseta* is discussed, as well as its superficial resemblance to other wingless sphaerocerids.

INTRODUCTION

During a revision of the African genus *Gymnometopina* Hedicke, we received a shipment of undetermined Sphaeroceridae from Dr J. G. H. Londt of the Natal Museum (NM). Among this material was a wingless species from Pietermaritzburg, which is described in this paper. We follow the morphological terminology of McAlpine (1981) and Kim & Cook (1966).

Scutelliseta mischogaster sp. n.

Etymology. The epithet is derived from the Greek 'mischos', meaning petiole, and 'gaster', meaning stomach, in reference to the shape of the abdomen.

Diagnosis. Abdomen strongly petiolate; row of postocular setae and small postocellar seta present; katepisternal and apical scutellar setae well developed.

Description. Holotype ♀: Length 2,20 mm (paratypes 2,00–2,30 mm).

Head. Orange-brown, flattened posteriorly; face, parafacials, and clypeus pruinose; lunule bare; frons pruinose, 0,25 mm at narrowest width; gena with anterior $\frac{3}{5}$ pruinose, posterior part bare except lower edge, height 1,10 mm; long diameter of eye 0,32 mm; 3 ocelli present, relatively small; ocellar and inner and outer vertical setae well developed; only a single (upper) fronto-orbital, 3–4 small interfrontals, minute postocellar, complete row of small postoculars. Antenna yellowish, second and third segments about equal in size; arista 0,70 mm long, about 10 times as long as third segment, pubescence short, 0,02 mm long.

Thorax. Mostly orange-brown; proepisternum and prosternum pruinose, presternum 1,4 times as broad as long; postpronotal lobe and scutum pruinose, the former weakly differentiated; acrostical setae small, in 4 to 6 uneven rows; a single pair of well-developed dorsocentral setae, almost in line with postalars (Fig. 1);

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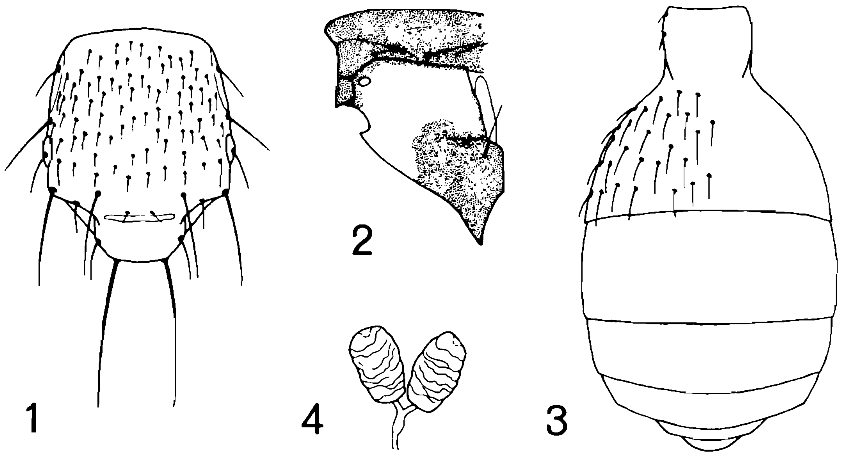

Figs 1–4. *Scutelliseta mischogaster* sp. n. 1. Thorax, dorsal view. 2. Anepisternum and katepisternum. 3. Abdomen, dorsal view (setal pattern shown only for left side of syntergite). 4. Spermathecae (only two drawn)

postpronotal, anterior and posterior notopleural, and postalar setae well-developed, supra-alars weak; anepisternum lacking pruinosity except on extreme margins (Fig. 2); katepisternum pruinose except upper anterior corner; one well developed katepisternal seta; anepimeron and meron mostly pruinose; mediotergite mostly bare; scutellum pruinose, with 2 pairs of marginal setae, apicals well developed, basals weak, about one quarter as long as apicals (Fig. 1); metapleuron yellowish, bare. Legs pruinose except posterior side of fore femur, ventral and posteroventral sides of mid and hind femora. Foreleg with coxa whitish, elongate, four-fifths as long as tibia; femur red-brown, with 1 or 2 posteroventral preapical setae; tibia and metatarsus dark brown; tarsomeres 2–5 pale white, sharply contrasting with tibia. Midleg with femur, tibia, and metatarus light red-brown; tarsomeres 2–5 yellowish; femur with well-developed anterior seta at $\frac{4}{5}$; tibia with 2 well-developed dorsal setae at $\frac{1}{4}$ and $\frac{4}{5}$, 2 weak anterodorsals at about $\frac{1}{5}$ and $\frac{2}{3}$, weak posterodorsal at $\frac{3}{4}$, and moderately strong ventral apical seta. Hindleg without outstanding setae; femur, tibia, metatarsus, and second tarsomere light red-brown; tarsomeres 3–5 yellowish; ventroapical tibial spur absent. Wings reduced to minute vestiges; halters completely absent.

Abdomen. Shiny black except for yellowish base of syntergite; mostly bare of pruinosity, but largely covered with short golden setae (Fig. 3); greatest width about three-fifths of length; syntergite strongly constricted at base; sternites extremely broad, slightly overlapped by tergites such that no membranous pleural area visible; sternite 3 more than 3 times as wide as long; medial parts of sternites 5 and 6, most of sternite 7 pruinose; tergite 9 and cerci weakly sclerotised, cerci short and stout; 3 spermathecae, apodeme very small, duct opening simple, surface with wrinkled appearance (Fig. 4).

Remarks. *Scutelliseta* Richards is a genus of apterous and micropterous dung flies from South Africa and Swaziland. Richards (1960*a*) established it as a monotypic genus, but later described an additional 16 species (Richards 1968). All 17 are apparently confined to very localised ranges (Richards 1968).

S. mischogaster differs significantly from the previously described species of *Scutelliseta* in having the abdomen strongly petiolate. In this respect it superficially resembles *Pismira* Richards and *Oribatomyia* Richards (Richards 1960*b*, 1965). It can be clearly distinguished from these genera, however, by the presence of ocelli, well-developed interfrontal and fronto-orbital setae, and a broadly trapezoidal scutellum with two pairs of marginal setae.

The inclusion of *S. mischogaster* within *Scutelliseta* is indicated by its broad prosternum, reduced basal scutellar setae, elongate fore coxae, bicolored fore tarsi, and lack of abdominal macrosetae. *S. mischogaster* possesses a row of postocular setae, however, and thus might be the sister group of all of the other species of *Scutelliseta*, which have the loss of the postoculars as a synapomorphy. *S. mischogaster* also retains a number of other plesiomorphic characters lost in most *Scutelliseta* species, including well-developed katepisternal and apical scutellar setae, and a small postocellar seta (= postvertical bristle of Richards).

Material examined. SOUTH AFRICA: *Natal*: 2 ♀ (holotype & paratype) Pietermaritzburg, Town Bush, 'ex. rotted leaf litter in depression of rock, totally shaded area of forest', 6.x.1960, B. & P. Stuckenberg (NM); 1 ♀ (paratype), same locality 19.x.1960, 'Mission Leleup' (NM); 1 ♀ (paratype) same locality, 19.x.1960, R. F. Lawrence (Frost Entomological Museum). Natal Museum Type no. 2756.

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REFERENCES

KIM, K. C. & COOK, E. F. 1966. A comparative external morphology of adult Sphaeroceridae. *Misc. Publ. Entomol. Soc. Amer.* **5**: 77–100.

MCALPINE, J. F. 1981. Morphology and Terminology—Adults. *In*: McAlpine, J. F. [et al.], eds. Manual of Nearctic Diptera. Ottawa: Agriculture Canada. **1**: 9–63.

RICHARDS, O. W. 1960*a*. A genus and species of wingless fly from South Africa (Diptera, Sphaeroceridae). *Ann. Natal Mus.* **15**: 71–73.

——— 1960*b*. Further brachypterous and apterous Sphaeroceridae in the collection of the Musée royal du Congo belge. *Rev. Zool. Bot. Afr.* **61**: 320–332.

——— 1965. CI. Diptera. Flightless Sphaeroceridae and chloropidae. *In*: Mission zoologique de l'I.R.S.A.C. en Afrique orientale (P. Basilewsky et N. Leleup, 1957). Results scientifique. Pt. S. *Annls. Mus. r. Afr. cent.* Ser. 8vo (Sci. Zool.) **138**: 415–464.

——— 1968. New South African species of the genus *Scutelliseta* Richards (Diptera: Sphaeroceridae). *Ann. Natal Mus.* **20**: 65–91.

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